CHAPTER 15

ELECTRONICS MATERIAL

The preceding chapter pointed out that before a requisition is submitted, it must bear either the stock number or a complete electrical and physical description of the requested item. Electronics material officers stationed at naval shipyards or aboard ships, who are engaged in requisitioning material, must understand the principles and tools of material identification. Furthermore, EMOs attached to supply activities spend a major portion of their time identifying and describing material. However, no matter where you are stationed, the ability to speak the language of supply and use stock numbers and descriptions which are understandable in the supply system will greatly enhance the accomplishment of your responsibilities.

MATERIAL CLASSIFICATION

FEDERAL CATALOG SYSTEM

The Federal Catalog System encompasses the naming, description, classification, and numbering of all items carried under centralized inventory control by the Department of Defense and the civil agencies of the Federal Government, as well as the publication of related identification data. Only one identification may be used for each item for all supply functions, from purchase to final disposal. The Federal Catalog System is also used by North Atlantic Treaty Organization countries.

FEDERAL SUPPLY CLASSIFICATION SYSTEM

The Federal Supply Classification (FSC) system is designed to permit the classification of all items of supply used by the Federal Government. Each item of supply will be classified in one, and only one, four-digit Federal Supply Classification Class. The first two digits denote the group or major division of commodities; the last two digits denote the class or subdivision of commodities within a group. There are 76 assigned groups; for example:
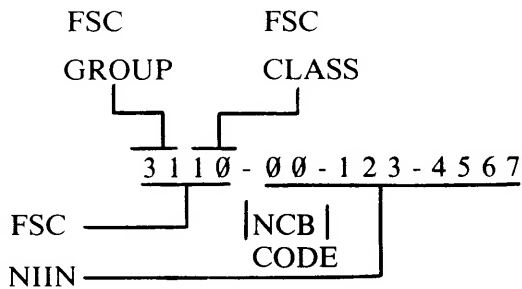
Group	Title
31	Bearings
43	Pumps and Compressors
48	Valves
59	Electrical and Electronic System Components
79	Cleaning Supplies

A complete listing of assigned groups is provided in NAVSUP P-485.

NATIONAL STOCK NUMBER (NSN) FORMAT

An NSN is a 13-digit stock number assigned by the Defense Logistics Services Center (DLSC) to identify an item of material in the supply distribution system of the United States. It consists of a four-digit Federal Supply Classification (FSC), and a nine-digit National Item Identification Number (NIIN). The NIIN consists of a two-digit National Codification Bureau (NCB) code and seven digits which, in conjunction with the NCB code, uniquely identify each NSN item

in the Federal supply distribution system. For example:

```
        FSC              FSC
      GROUP            CLASS
        └─┐        ┌─┘
          3 1 1 0 - 0 0 - 1 2 3 - 4 5 6 7
    FSC ──────┘    │NCB│
    NIIN ──────────  CODE ┘
```

There are two NCB Codes assigned for the United States. NCB Code "00" identifies all FSNs (eleven digit Federal Stock Numbers—FSNs—were used prior to NSNs) assigned prior to 31 March 1975. In the example below, note that although the last seven digits of the NIIN are identical, the items are different. One has an NCB Code of "00" and the other item has an NCB Code of "01." Errors in the use of "00" and "01" can result in rejected requisitions or receipt of the wrong material.

COG	FSC	NIIN	NOMENCLATURE	PRICE
9N	5915	-00-005-8825	FILTER	$ 182.97
2R	1650	-01-005-8825	CYLINDER	2,120.00

Special Material Identification Code (SMIC)

An SMIC is a two-position alpha or alphanumeric code that is assigned by the Commander, Naval Supply Systems Command, to certain NSN items which require:

1. Source of quality control
2. Technical design or configuration control
3. Special controls for procurement, receipt, inspection, test, storage, and/or issue. SMIC codes authorized and assigned are listed and defined in SPCCINST 4441.170, Appendix C. When a SMIC is assigned to an NSN item, the SMIC will be suffixed to the NSN in all supply documents and records.

NAVY ITEM CONTROL NUMBERS (NICNs)

Items of material that are not included in the Federal Catalog System, but which are stocked or monitored in the Navy supply system, are identified by Navy Item Control Numbers (NICNs). NICNs are 13-character item identification numbers which are assigned by ICPs or other Navy item managers for permanent or temporary control of selected non-NSN items under their cognizance. An NICN item in the Navy supply system consists of four numerics in the first four positions; a two-position alpha code (NICN code) which identifies the type of NICN, and then seven digits or alphanumerics which, in conjunction with the NICN code, uniquely identify each NICN item in the Navy supply system. The NICN codes applicable to the types of NICNs currently authorized in supply records and transaction documents are as follows:

NICN Code	Application	Examples
LE	POSEIDON items common to TRIDENT	1220-LE-F00-4016
LF	Cog I stock numbers for forms	0108-LF-504-2201
LK	Aircraft change kit numbers	1234-LK-UA1-2345
LP	Cogs 01 and 0P stock numbers for publications	0530-LP-485-0000
LS	SSPO alteration kit numbers	1234-LS-123-4567
LX	Local control numbers assigned by ASO field activities to certain items under their inventory control (see ASO Pub. NAC-10)	1560-LX-NP1-2345
LL	All other control numbers assigned by: An ICP or Other Navy-item managers Any other activity	4820-LL-HH0-7571 7520-LL-000-1234

Care must be exercised when dealing with NICNs which contain LL in the fifth and sixth positions of the number. For instance, a C used as the seventh character indicates nonauthorization on DD Forms 1348 while 0000123 (vice 000-D123) indicates a local control number. For a complete explanation, refer to NAVSUP P-485 paragraph 2033.

Temporary Control Number

Temporary control numbers are authorized in all transaction documents.

Local Control Number

Local control numbers are not authorized in any requisition document unless it is submitted to the activity that assigned the number.

The first four digits of "LL" coded NICNs generally correspond to the FSC of similar NSN items. If the first four digits of the NICN are not known, and if an appropriate FSC cannot be determined, "0000" will be entered as the first four digits of the NICN in supply records and transaction documents.

TEMPORARY "LL" CODED NICNs.— NICNs are "LL" in the fifth and sixth positions, and any letter except "C" in the seventh position are assigned by ICPs or other Navy inventory managers (including field activities) for temporary identification and control of selected non-NSN items pending assignment of NSNs by the Defense Logistics Service Center (DLSC). The use of such NICNs enables item managers to establish and maintain automated file records, to facilitate procurement action, and to maximize automated processing of requisitions. Although NICNs of this type may be reflected in APLs and stock number sequence lists (SNSLs), they are not included in the Management List-Navy (ML-N). (Superseding NSNs ultimately will be included in the ML-Ns as new adds without reference to the superseded NICNs.)

Conversion to NSN.—Temporary "LL" coded NICNs are reviewed periodically by cognizance item managers to ensure that appropriate action has been or is being taken to convert the NICNs to NSNs, or to delete the NICNs that are no longer required. NICN to NSN cross-reference lists are published periodically in notices issued by cognizant item managers. Additionally, when a requisition identifies an item by a temporary NICN which has been converted to an NSN, the supply status card sent to the requisitioner will include the superseding NSN in card columns 8-22 and status code BG in card columns 65-66. Upon receipt of such notices or supply status cards, afloat activities will update stock or custody records, locator records (if maintained), the COSAL, and retained copies of outstanding requisitions to reflect the superseding NSNs.

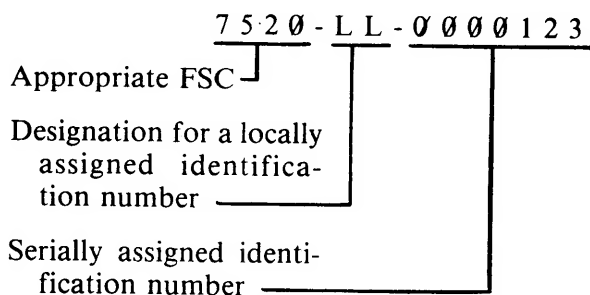**Permanent Navy Item Control Number (P-NICN)**

A P-NICN formally known as a Unique Control Number (UCN) or Permanent NICN, is assigned by ICPs or other Navy item managers to identify and monitor certain non-NSN items which are not expected to generate sufficient demand to qualify for assignment of NSNs. A P-NICN is a 13-character alpha numeric designation with "LL" in the fifth and sixth positions and a "C" in the seventh position (LL-CAO-0001). Any item assigned a P-NICN must be requisitioned by FSCM and part number on a DD Form 1348-6.

Local Item Control Number

Technically, any item identification number assigned by an activity for its own use is an NICN. However, to distinguish between NICNs that are authorized in supply transaction documents and those that are not, the term "local item control number" will be used in lieu of "NICN" in this publication to indicate the type of identification number that is not authorized in supply transaction documents. Local item control numbers (formally called local stock numbers) may be assigned to shipboard stocked consumable items which are not identified by an NSN, a NATO stock number, or another type of NICN. A local item control number will consist of 13 characters. The first four will be numerics that correspond to the FSC of similar NSN items; the fifth and sixth will be

"LL" and the remaining seven will be all numerics. For example:

7 5 2 0 - L L - 0 0 0 0 1 2 3

Appropriate FSC ⌐

Designation for a locally assigned identification number ⌐

Serially assigned identification number ⌐

Locally assigned item control numbers are authorized for local use only (i.e., for shipboard stock records, locator records, bin tags, issue documents, and the like). They are not authorized in requisitions inasmuch as such item identification numbers would be meaningless to the supply source. If replenishment of a locally numbered item is required, it must be requisitioned by DD Form 1348-6 in accordance with NAVSUP P-485 paragraph 3025.

NORTH ATLANTIC TREATY ORGANIZATION (NATO) USE OF THE FEDERAL CATALOG SYSTEM

The NATO Standardization Agreement 3151, which has been ratified by 15 NATO nations including the United States, provides for the adoption of the United States item identification system as the basis for the NATO item identification system within the armed forces of signatory countries. The method of application of this standardization agreement within each NATO country will remain a matter of national discretion.

NATO Stock Number Format

The format of a NATO stock number is as follows:

3 1 1 0 - 2 1 - 4 2 6 - 1 2 8 4

NATO Supply Classification ⌐

NCB CODE ⌐

NATO Item Identification Number ⌐
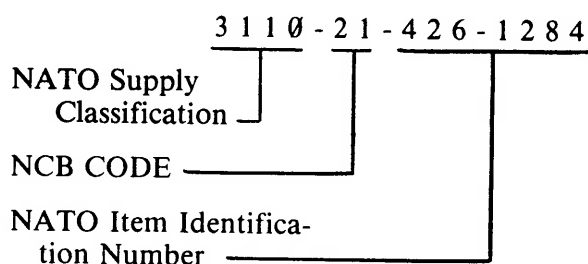
The National Codification Bureau (NCB) codes currently assigned are listed as follows:

00	United States	24	Iceland
01	United States	25	Norway
11	NATO Standard Items	26	Portugal
12	Germany	27	Turkey
13	Belgium	28	Luxembourg
14	France	29	Argentina
15	Italy	30	Japan
17	Netherlands	31	Israel
21	Canada	66	Australia
22	Denmark	98	New Zealand
23	Greece	99	United Kingdom

MANAGEMENT DATA LISTS

Material identification does not end with the assignment of a stock number. The customers of the supply system must be provided with some means of matching desired items to the stock numbers which have been assigned, and of determining the correct quantities of these items to carry on board. Identification of needs may be determined by using the following lists:

1. Management data lists which provide current data required for requisitioning purposes; e.g., latest NSN, unit of issue, price, cognizant inventory manager, and control codes.

2. Allowance lists which contain the items authorized (e.g., controlled equipage, repair parts, and consumables) quantities that should be on hand, and descriptive data which matches a material requirement to an NSN.

3. Load lists which reflect the range and depth of material carried by mobile logistics support force (MLSF) ships (including tenders and repair ships) or bases to fulfill assigned supply support of fleet units.

MANAGEMENT LIST-NAVY (ML-N) AND RELATED PUBLICATIONS

Complete and accurate management data must be available for requisitioning purposes and for effective financial and inventory control of material. The introduction of Federal Supply Catalogs and Related Publications (NAVSUP P-4000) contains valuable information and instructions, with which you should familiarize yourself. The ML-N provides the basic management data. The related publications were developed to supplement the ML-N by providing additional management data and by consolidating certain information for reference purposes. The ML-N and related publications all have the NSN as a common data element. (See figure 15-1.)

Primary Publication

The ML-N is published by the Defense Logistics Services Center (DLSC). This publication is published on 48X microfiche, and a complete revision is distributed quarterly. It includes the basic management data necessary for preparing requisitions. It includes an integrated historical record of deleted and superseded NIINs, with appropriate phrase codes to indicate disposition action. The ML-N is tailored to include Navy interest items and is the instrument for publishing data relative to stock numbers, units of issue, unit prices, shelf-life codes, and other pertinent management information. The ML-N provides other data of importance to the EMO; namely whether an item is a mandatory turn-in item, whether it is OPTAR funded and if so the net cost (with turn-in) or unit cost (without turn-in).

Related Publications

The ML-N provides most of the required management data related to a stock number. Other essential information is included in related publications which should be used in conjunction with the ML-N. These publications are described below:

1. MCRL (Master Cross-Reference List).—Part I provides cross-reference from reference number to NSNs. Part II provides cross-reference from NSN to reference number. (See figure 15-2.)

2. LIRSH (List of Items Requiring Special Handling).—Serves as a reference to identify items in the supply system which require special handling.

Figure 15-1.—Management List-Navy (ML-N).

63.51

The column headers shown diagonally at the top are: REFERENCE NUMBER, FEDERAL SUPPLY CODE FOR MANUFACTURERS, NATIONAL STOCK NUMBER, ITEM STANDARDIZATION CODE, REFERENCE NUMBER VARIATION CODE, REFERENCE NUMBER CATEGORY CODE, SERVICE/AGENCY DESIGNATOR CODE, DESCRIPTION AVAILABILITY

J17 REF NO	FSCM	NSN	I S C	R N V C	R N C C	S A D C	D A	ITEM NAME
CBTV545A	80009	6625-00-714-3992* 6625-00-225-0248	3	2	5			OSCILLOSCOPE
CBTYPE102	77075	8030-00-734-9314	5	2	3		N	COMPOUND, CALKIN
CBTZ2200D	23040	2530-00-062-0345* 2530-00-278-2287	2	2	5			CUP, HYDRAULIC B
CBTZ6256A	23040	3020-00-499-9631	C	2	3		N	SPROCKET, DRIVE
CBT12	85597	3460-00-586-6650	5	2	3			CHIP BREAKER
CBT13-023	80103	5910-00-500-9119	3	2	3			CAPACITOR, FIXED

PART-1

NSN	I S C	REF NO	FSCM	R N V C	R N C C	S A D C	D A	ITEM NAME
5905-00-714-3979	3	5905-00-503-5984*						
6625-00-714-3990	5	10656-307	94756	2	3		N	PULLEY, FLAT WEB
6625-00-714-3992*	3	CBTV545A	80009	2	5			OSCILLOSCOPE
		PC834900041-5	38597	2	3			OSCILLOSCOPE
		1011931	56232	2	5			OSCILLOSCOPE
		1848288	10001	2	3			OSCILLOSCOPE
		1848288	30003	2	5			OSCILLOSCOPE
		545A	80009	2	3			OSCILLOSCOPE
		9975856	18876	2	5			OSCILLOSCOPE
		6625-00-225-0248						
6625-00-714-3993	6	6587	47496	2	3			METER, ELECTRICA

PART-2

245.98

Figure 15-2.—Master Cross Reference List (MCRL).

3. MRIL (Master Repairable Item List).—Lists Navy managed repairable items and provides guidelines for the turn-in of repairable material. (See figure 15-3.)

4. CHIL (Consolidated Hazardous Item List).—Serves as a guide to identify items in the supply system which are potentially hazardous to life or property. (See figure 15-4.)

5. ASG (Afloat Shopping Guide).—Provides illustrations to assist in the selection and identification of items in selected stock classes.

| LONG SUPPLY IND. | SCHED REMOVAL COMP CARD CODE | COG SYMBOL/ MAT'L CONTROL CODE | NATIONAL ITEM IDENTIFICATION NUMBER/NAVY ITEM CONTROL NUMBER/ AIRCRAFT ENGINE MODEL NUMBER | SPEC MAT'L IDENT CODE | REPAIR MAINT. CODE/ RECOVER-ABILITY CODE | SECUR-ITY CLASS | SHIP-PING CODE | MOVEMENT PRIORITY DESIG-NATOR | NOTES |

L S I	S R C	C O G	M C C	NIIN/NICN/MODEL	SMIC	R M C	R C	S E C	SHPG CODE	M P D	NOTES
		7H	H	6675-00-714-3642		D	D	U	N00189 N00228	13	USE CONTAINER 00-789-2993
		1H	D	6625-00-714-3876		0	G	U	WW		
		7Z	H	6625-00-714-3992	TE	0	D	U	N00189 N68276	06	BLUESTRIPE
		7G	H	6625-00-714-4223		F	D	U	N00189 N68276	06	BLUESTRIPE
		1R	D	1650-00-714-4365	EU	G	G	U	WW		
		2R	M	1650-00-714-4475	LC	G	D	U	N00146	13	RMN IN PLACE

PART I—LISTING OF ITEMS

SHIPPING CODE	SHIPPING INSTRUCTIONS	UIC/ FSCM
N00189	IRAM NAVAL SUPPLY CENTER NORFOLK, VA 23511 ATTENTION OF BLDG SP-237	

PART 2—SHIPPING ADDRESS

245.99

Figure 15-3.—Master Repairable Item List (MRIL).

6. DLA ILs (Defense Logistics Agency Identification Lists).—Provides technical characteristics or other identifying data for all items in the federal supply groups and classes assigned to the respective DSCs.

MISCELLANEOUS SOURCES OF IDENTIFICATION

Commercial Catalogs and Instruction Books

Commercial catalogs and instruction books or pamphlets are issued by the manufacturer and contain information which is of value in the preparation of procurement documents for nonstandard material. These catalogs and instruction books provide a further source of identifying information and should be used as a supplement to Navy publications to provide a quick and accurate method of identifying commercial equipment, repair parts, and accessories.

Serial Number

Certain technical material may be serially numbered, either by direction of the responsible bureau or systems command or by the manufacturer. These serial numbers are used in maintaining records on the material and appear on all vouchers, records, custody cards, and survey reports.

Nameplates

Material Identification, particularly portable and installed equipment, is facilitated by reference to nameplates attached to the

SECTION A
Consolidated Hazardous Item List

NATIONAL STOCK NUMBER	SC MC ID CE	NOMENCLATURE	H Z R D	HFR	SPECIFIC	STRG S/S C	NATIONAL STOCK NUMBER	SC MO ID CE	NOMENCLATURE	H Z R D	HFR	SPECIFIC	STRG S/S C
5960-00-001-2996		TUBE MAGNETIC	M			B	8030-00-081-2329		SEALING CPD	C	010		B
6750-00-001-9398		KIT PHOTOGRAPHIC PRE	G	010		B	8030-00-081-2330		SEALING CPD	C	010		B
6850-00-003-1194		CLEANING COMPOUND LU	T	100		B	8030-00-081-2331		SEALING CFD	G	010		B
6850-00-003-5295		CLEANING COMPOUND LU	T	100		B	8030-00-081-2333		SEALING CPD	G	010		B
6810-00-006-4205		ETHYLENE GLY	G	110		B	8030-00-081-2335		SEALING CPD	C	010		B
6810-00-006-4236		ETHYLENE GLY	G	110		B	8030-00-081-2336		SEALING CPD	C	010		B
5999-00-010-1435		MAGNET	M			B	8030-00-081-2337		SEALING CPD	C	010		B
6750-00-010-7942		DEVELOPER, PHOTO, PW	T	100		B	8030-00-081-2338		SEALING CPD	C	010		B
6750-00-010-7943		DEVELOPER, PHOTO, PW	T	100		B	8030-00-081-2339		SEALING CPD	G	010		B
6750-00-010-7945		POTASSIUM BROMIDE	T	100		B	8030-00-081-2340		SEALING CPD	C	010		B

SECTION B
Consolidated Hazardous Item List

NOMENCLATURE	NATIONAL STOCK NUMBER	SC MO ID CE	H Z R D	HFR	SPECIFIC	STRG S/S C	NOMENCLATURE	NATIONAL STOCK NUMBER	SC PC IC CE	H Z R D	HFR	SPECIFIC	STRG S/S C
ACACIA, PWDR	6810-00-299-1429	Z	110			B	ADHESIVE	8040-00-526-1910	F	241			G
ACCELERATOR VULC. PR	6810-00-009-0228	F	140			G	ADHESIVE	8040-00-543-4312	F	130			G
ACCELERATOR, RUBBER	6850-00-009-0227	F	230			G	ADHESIVE	8040-00-656-0929	S	121			G
ACCESSORY OUTFIT, FI	7360-00-082-6592	W				B	ADHESIVE	8040-00-689-7442	S	120			G
ACETIC ACID	6750-00-985-6054	C	221	ACID		G	ADHESIVE	8040-00-691-1322	S	120			G
ACETIC ACID, GLACIAL	6750-00-141-6558	C	221	ACID		G	ADHESIVE	8040-00-720-3008	T	100			B
ACETIC ACID, GLACIAL	6810-00-221-1415	C	221	ACID		G	ADHESIVE	8040-00-753-4800	S	120			G
ACETIC ACID, GLACIAL	6810-00-222-2634	C	221	ACID		G	ADHESIVE	8040-00-777-0631	G	110			G

SECTION C
Consolidated Hazardous Item List

A C T	NATIONAL STOCK NUMBER	SC MO ID CE	NOMENCLATURE	H Z R D	H-F-R	SPECIFIC	STRG S/S C	WEIGHT LBS	CUBE FT	DISPOSAL ASHORE OPTIONS 1 P D N	2 P D N	3 P D N	AFLOAT 1 P O
D	5960-00-001-2996		TUBE MAGNETIC	M			B	006.02	30.1000	00 6B 02	00 00 00	00 00 00	5M 02
A	5910-00-001-3061		CAPACITOR	T	3-0-0		P			00 6A 00	30 00 00	00 00 00	00 00
A	6750-00-001-9398		KIT PHOTOGRAPHIC PREHARD	G	0-1-0		B	092.30	00.4250	00 6A 00	00 6B 00	00 00 00	00 02
A	6850-00-003-1194		CLEANING COMPOUND LUBRIC	T	1-0-0		B	001.52	00.0043	00 90 00	00 00 00	00 00 00	00 04
A	5910-00-003-4729		CAPACITOR	T	3-0-0		P			00 6A 00	00 00 00	00 00 00	00 04
A	6850-00-003-5295		CLEANING COMPOUND LUBRIC	T	1-0-0		B	002.00	00.0400	00 6A 75	00 6B 75	00 00 00	00 01
A	5910-00-004-6338		CAPACITOR	T	3-0-0		P			00 6A 00	00 00 00	00 00 00	00 04
A	5910-00-005-3036		CAPACITOR	T	3-0-0		P			00 6A 00	00 00 00	00 00 00	00 04
A	6850-00-005-5345		CLEANING COMPOUND SOLVEN	S	1-2-0		C	009.00	00.2000	00 9D 00	00 00 00	00 00 00	00 04
	5610-00-006-1547		FLIGHT DECK COMPOUND	F	1-3-0		G	013.50	00.2200	0L 6D 00	00 5F 00	00 00 00	00 02

Figure 15-4.—Consolidated Hazardous Item List (CHIL). 245.111

equipment. Nameplate data includes the manufacturer's name, and the equipment make or model number, serial number, size, voltage, and the like.

Drawing Numbers

Certain technical materials are identified by a drawing or sketch number assigned by the controlling bureau or systems command or by the manufacturer. When requisitioning nonstandard items, the drawing number, when available, will be included in the technical data being supplied in the NON-NSN Requisition (Manual) (DD Form 1348-6) to assist in positive identification.

Markings

Various items of electronic equipment are identified by Joint Electronics Type Designations (JETDs) nomenclature (e.g., AN/UYK-5(V)), Navy type or model number, and manufacturer's model number, as well as stock number and serial number. In addition, major units of fire control radar equipment are identified by mark and modification numbers.

Contractors' Service Bulletins

Contractors' service bulletins include contractors' recommendations for modification or repair of specific equipment. They cover a wide range of equipment and usually contain part numbers, nomenclature, and names of manufacturers.

Naval Ships' Technical Manual (NSTM)

The NSTM is published by NAVSEA and contains information and instructions for the operation, care and repair of systems.

Ship Armament Installation List (SAIL) (E 0010)

The Ship Armament Installation List (SAIL) is the basic configuration document to report the status of installed ordnance configuration. The SAIL is produced from the Master Ordnance Configuration (MOC) File as a product of SECAS. The configuration records (MOC) utilized to produce the SAIL are the official and only authorized NAVSEA input to the inventory control points for purposes of COSAL production, and are utilized to determine publication requirements, ammunition allowances, maintenance requirement card (MRC) distribution, and overhaul budget estimates. MOC data is provided to SPCC for input to the Weapon System File (WSF) prior to COSAL production.

Navy Stock List of Publications and Forms (NAVSUP 2002)

The list contains requisitioning procedures and sources of supply for cognizance symbol I

material. Publications are listed in different orders; that is: by hull number (CV-62), Equipment nomenclature (AN/SPS-10F) and by title (Radar Set, AN/SPS-10F). Of particular interest to the EMO is the Ship Information Book (Vol 4) in the hull number sequence. This book gives a broad overview of electronic systems applicable to a particular ship or class. It also includes NSNs of applicable technical manuals for equipments installed. NAVSUP 2002 also lists ships drawings for certain systems.

Publication Applicability List (PAL)

The PAL lists technical manuals for operating and maintaining onboard systems and equipments which are under the cognizance of NAVSEA and NAVELEX. It is a guide to personnel of a particular ship for use in determining publication needs. This publication is prepared and updated by Naval Ship Weapons Engineering Station (NSWSES) Port Hueneme. It also will replace the Technical Manual Index (TMI) for which stock numbers are listed in Volume I of the PAL.

Federal Supply Code for Manufacturers (Cataloging Handbook H4)

The handbook contains names and addresses of manufacturers which have, or are currently producing, items used by the Federal Government. The FSCM is published in three volumes:

Part I—Five digit code to name of manufacturer and address (U.S. and Canada)

Part II—Manufacturer name and address to five digit code (U.S. and Canada)

Part III—For all other countries

Ships Portable Electrical/Electronic Test Equipment Requirements List (SPETERL)

The SPETERL represents the latest known requirements for Portable Electrical/Electronic Test Equipment (PEETE).

Ship Equipment Configuration Accounting System Electronics Reports

The SECAS Electronics Reports are the electronics configuration documents which are distributed by the NAVSEACENDETs subsequent to shipboard validations and at other times when major configuration changes occur. The electronics configuration data in the WSF is provided by the NAVSEACENDETs, and the configuration data for the SECAS electronics reports is obtained from the WSF. See the *SECAS Catalog of Products* for additional details on all SECAS reports available. Copies of the *SECAS Catalog of Products* are available from NAVSEA (0411) or the NAVSEA-CENDETs. The *SECAS Program Manual, Volume 4, Shipboard Operations,* describes the operation of the SECAS program and is authoritative for all SECAS actions. See also NAVMATINST 4130.5 for SECAS policy.

HOW IDENTIFICATION TO A CURRENT NSN IS ACCOMPLISHED ABOARD SHIP

As a first step in obtaining required material, the requirement must be correctly identified to a current NSN. (See figure 15-5.) There are three basic methods of entry into the catalogs to obtain the current NSN:

1. Entry with an NSN (which may or may not be current)

2. Entry with a reference number (manufacturer's part number, Navy drawing number, or other reference number)

3. Entry with a noun name and/or physical characteristics description

ENTRY WITH NSN

In actual practice, a requisition containing a National Stock Number as obtained by the customer is submitted to the supply department. (See figure 15-6.)

The department should have several personnel well versed in the use of the catalogs and able to identify material to a NSN. It is usually only the more complicated identification problems which require storekeeper or supply officer assistance.

The techniques and the publications used in obtaining the NIIN will be discussed in greater detail in subsequent paragraphs. Only the NIIN portion is used to enter the ML-N, which is arranged in NIIN sequence without regard to Cog symbol and Federal Supply Class. (This is a device which eliminates the necessity of a special publication to treat Cog and Federal Supply Class changes.) In the vast majority of cases, the ML-N section will provide the required management data.

ENTRY WITH PART, DRAWING, OR PIECE NUMBER

A reference number is generally considered to be any number, other than a current NSN, that can be used to identify an item or to assist in identification to a current NSN. Reference numbers therefore include old NSN, electron tube type numbers, and electronic equipment circuit symbol numbers. There are, however, two additional important types of reference numbers which can be converted to National Stock Number by the publications entitled *"Master Cross-Reference List."* They are: (1) manufacturers' part numbers and (2) Navy drawing and piece numbers.

Manufacturers' part numbers are those numbers assigned to parts by the manufacturers who designed and built the equipment. They were assigned originally by the manufacturers for their own use in cataloging and identifying their own material. Some manufacturers used part number formulation systems in which their plan or drawing and piece numbers form all or a portion of their part numbers.

Navy drawing and piece numbers were assigned originally by Navy technical commands to identify items in equipment built and/or designed by those commands. Some items may have both manufacturer's part numbers and Navy drawing and piece numbers assigned, in various reference publications.

SUPPLY DEPARTMENT RECEIVES REQUEST FROM CUSTOMER. VERIFIES NSN, COG, U/I, U/P, AND NOMENCLATURE FOR ACCURACY THAT NSN PROPERLY IDENTIFIES THE DESIRED MATERIAL.

ML-N BULLETIN

NSN NOT LISTED IN ML-N BULLETIN

ALL DATA CORRECT

ML-N

NSN NOT LISTED IN ML-N

DEFINITIONS OF ABBREVIATIONS:

NSN   NATIONAL STOCK NUMBER
NIIN   NATIONAL ITEM IDENTIFICATION NUMBER
COG   COGNIZANCE SYMBOL
U/I   UNIT OF ISSUE
U/P   UNIT PRICE
ML-N   MANAGEMENT LIST NAVY
ASG   AFLOAT SHOPPING GUIDE
P/N   PART NUMBER
MCRL   CONSOLIDATED CROSS-REFERENCE LIST
DTO   DIRECT TURN OVER
FSCM   FEDERAL SUPPLY CODE FOR MANUFACTURERS

OBTAIN MANUFACTURER'S PART NUMBER AND FSCM

VERIFY NOMENCLATURE IN ASG OR FED. SUP. CAT.

CORRECTED P/N OBTAINED

MCRL

P/N CROSSED TO NIIN

VERIFY REQUESTED NSN AND P/N IN TECHNICAL REFERENCE

UNABLE TO LOCATE

NO CHANGE TO NSN OR P/N REQUESTED

ASG OR FED. SUP. CAT. TO OBTAIN NSN FROM DESCRIPTION

CORRECT NSN

UNABLE TO LOCATE

COMPLETE DATA OR PROCESS FOR DTO

PREPARE DD FORM 1348-6 WITH ALL AVAILABLE INFORMATION

123.103

Figure 15-5.—Material identification chart for repair parts and technical material (supply).

When a technician first attempts to identify to a current NSN an item which is required, the initial search may well be for a manufacturer's part number or a Navy drawing and piece number. There are several possible sources for obtaining such numbers:

● The part number may be stamped on the item to be replaced.

● Plans available on the ship may be checked to obtain Navy drawing and piece numbers.

● Equipment technical manuals may refer to manufacturer's part number or Navy drawing and piece numbers.

Technical manuals, furnished by the manufacturer, are publications which contain a
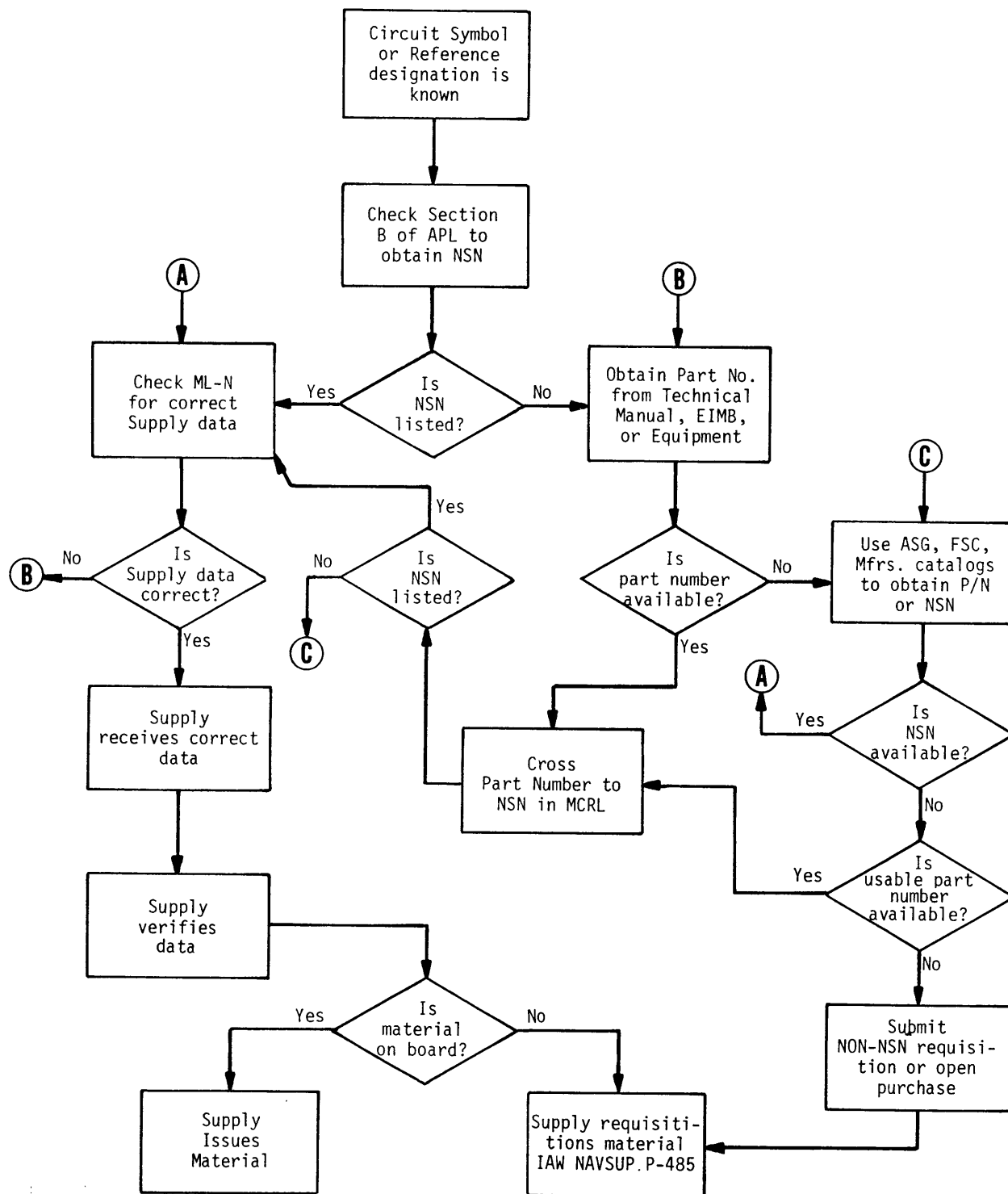
Figure 15-6.—Material identification chart (customer).

245.100

detailed description of an equipment and instructions for its effective use. Normally supply officers do not have technical manuals in their custody. A large number of technical manuals are, however, maintained and used by the ship's technicians in maintaining the complex equipment installed in the ship. These technical manuals are of vital importance to the technicians in their day-to-day routine of trouble-shooting and preventive maintenance. They are also used by technicians as a basic source of identification information for repair parts.

To obtain a current NSN when a reference number is known, enter the Master Cross-Reference List (MCRL) with the reference number to determine the NIIN. When the NIIN is listed, check to ensure that the Federal Supply Code for Manufacturers coincides with that of the manufacturer of the part.

ENTRY WITH NOUN NAME
OR PHYSICAL DESCRIPTION

The third means of obtaining a current NSN involves beginning the search with a noun name and/or physical characteristics description of the item concerned.

There are two different methods of describing an item, other than by NSN. The one method employs a physical description of the item and perhaps a description of its electrical, chemical, or other properties. This type of description is similar to that provided in mail order catalogs. The other method, which has been previously covered, employs only a description of the item by reference number; i.e., manufacturer's part number. The majority of items in the Navy Supply System are covered only by reference number descriptions, because these items defy or make impractical a physical description.

There are, however, large numbers of items which are desirable and practical to describe by physical characteristics. Included in the category are many common-use items of nontechnical nature such as paint, hand tools, nuts, bolts, and the like. Additionally, some technical items such as fuses, resistors, and electron tubes have been cataloged in this fashion.

The NIIN for a common-use item with a noun name/physical characteristics description can be found in the *Afloat Shopping Guide* (ASG).

MATERIAL COGNIZANCE

There are over four million supply items in the Department of Defense Supply System. The Navy Supply System alone stocks over one million items. For proper requisitioning of a specific item from an activity ashore, a common language has been developed—the Federal Catalog System. This section provides a description of some of the material classification systems of the Navy and the sources of information for material identification and procurement. They also provide definitions of terms used throughout the naval service in identifying, classifying, and inspecting naval material.

COGNIZANCE SYMBOL

A cognizance symbol is a two position numeric-alpha code that identifies a stock-numbered item with the Navy Inventory Manager of the specific category of material in which the item is included. It also indicates whether the material is managed in a Navy Stock Account (NSA), an Appropriations Purchase Account (APA), or a nonstores account.

● NSA—odd number precedes the alpha character; e.g., 9N, 9G, 1H, 9Z

● APA—even number precedes the alpha character; e.g., 4N, 2H, 2Z

● Nonstores—zero as the first digit; e.g., 01

THE NAVY STOCK ACCOUNT (NSA)

The Navy Stock Account (NSA) is a stores account in which materials financed by the Navy Stock Fund (NSF) are held by a Navy ashore supply activity or by a Special Accounting Class 207/224 ship, pending issue and charge to an end-use activity. The NSF is a "revolving fund" which means that when material held in NSA

(stores account 51000) is "sold" to an end-use customer, the amount charged to the operating budget that finances the customer's operations is automatically credited to the NSF, thereby ensuring constant availability of funds for continuous purchase of more NSA materials. The NSA is comprised of the more commonly used items which experience relatively frequent demands. NSA items are considered to be "expense" type items, which usually have a unit price of less than $1000, and which normally are chargeable to the ship's operating funds. The majority of Navy-owned items in the Navy Supply System are carried in NSA.

APPROPRIATION PURCHASE ACCOUNT (APA)

The Appropriation Purchase Account (APA) is a stores account in which materials financed by an appropriation are held (in stores account 52000) by an ashore supply activity pending issue and "statistical" charge to an end-use activity. Unlike the NSA, APA materials are immediately charged to an appropriation at the time of purchase, and the "statistical" charges of issues do NOT generate any credit to the appropriation which financed the procurement. APA items generally are considered to be "investment" type items which usually have a unit price of $1000 or more, and which are not chargeable to the ship's operating funds (OP-TAR). APA items comprise only 11 percent of the total number of items stocked by the Navy supply system, but represent 85 percent of the total inventory money value. Because of their significant cost and the relatively infrequent demand, APA items are stocked by the supply system in limited quantities. Therefore, they must be accorded special management attention by each echelon of supply. Some items which were formerly APA items are being transferred to NSA. Of particular interest to the EMO is test equipment movement from 4G to 7Z cognizance.

MATERIAL IDENTIFICATION ABOARD SHIP: DEFINITIVE TERMINOLOGY

Proper item identification is essential to the receipt of correct material. It is also important to have a clear understanding of the terminology used in material identification. A few of the more common terms relative to various types of materials are defined in this section.

● MATERIAL. The term "material" is used to designate supplies, repair parts, equipment, and equipage used in the Navy.

● EQUIPMENT. The term "equipment" refers to any functional unit of hull, mechanical, electrical, ordnance, or electronic type material which is operated singly or as a component of a system or subsystem and which is identified by a component identification number (CID), numerical control code (NCC), allowance parts list (APL), or similar designation.

● SUPPORT EQUIPMENT. The term "support equipment" refers to equipment such as test equipment, fixtures, hand tools, and the like, required for the maintenance, assembly, disassembly, overhaul, repair, and test or check of the end item.

● EQUIPMENT.

1. GENERAL. The standard terms outlined as follows describe the breakdown of electrical, electronic, mechanical, pneumatic, and hydraulic military equipment.

2. PART. The term "part" refers to one piece, or two or more pieces joined together which normally are not subject to disassembly without destruction of the designed use (e.g., outer front wheel bearing of 3/4 ton truck, electron tube, composition resistor, screw, gear, mica capacitor, audio transformer, milling cutter).

3. SUBASSEMBLY. The term "subassembly" refers to two or more parts which form a portion of an assembly or a unit replaceable as a whole, but having a part or parts which are individually replaceable (e.g., gun mount stand, window sash, recoil mechanism, floating piston, telephone dial, terminal board with mounted parts).

4. ASSEMBLY. The term "assembly" refers to a number of parts or subassemblies or

any combination thereof joined together to perform a specific function (e.g., power shovel front, fan assembly, audio frequency amplifier). The distinction between an assembly and a subassembly is not always exact.

5. NEXT HIGHER ASSEMBLY. When the source code "XA" appears on an APL/AEL, it indicates that the failed part is not procured nor stocked, and the "next higher assembly" must be requested in order to replace the failed part. For example, an individual spring is not stocked, but it is included in the "spring assembly" which is an allowed repair part.

6. UNIT. The term "unit" refers to an assembly or any combination of parts, subassemblies, and assemblies mounted together, normally capable of independent operation in a variety of situations (e.g., hydraulic jack, electric motor, electric generator, radio receiver). The size of an item is a consideration in some cases. An electric motor for a clock may be considered as a unit, since it is not normally subject to disassembly.

7. GROUP. The term "group" refers to a collection of units, assemblies or subassemblies which is a subdivision of a set or system but which is not capable of performing a complete operational function (e.g., antenna group, indicator group).

● EQUIPAGE.

1. GENERAL. The term "equipage" refers to those items which require management control because they have a high unit cost, and/or are vulnerable to pilferage, and/or are essential to the ship's mission. Equipage does not encompass installed mechanical, electrical, ordnance, or electronic equipments, components, or systems. Equipage items generally are identifiable to end-use applications aboard ships to the extent that an allowed quantity of the item can be, and is, determined on an individual ship basis. Chargeable items of equipage are identified in procurement, receipt, and consumption documents by the letter "E" in the second position of the applicable fund code. (See NAVSO P-3013.)

CONTROLLED EQUIPAGE. The term "controlled equipage" refers to those items of equipage which require special management control because the material is: (1) Essential for the protection of life or (2) relatively valuable and easily convertible to personal use.

Controlled equipage (e.g., life preservers, gas masks, binoculars, and firearms) generally is carried onboard in allowance quantities only, and requires special inventory control in accordance with NAVSUP P-485. Items classified as controlled equipage are listed in NAVSUP P-485, Appendix 11.

● EQUIPMENT AND EQUIPAGE REPLACEMENTS FUNDED BY TYPE COMMANDER AS CONTROLLED EQUIPAGE. Durable, high priced, and essential items of equipment and equipage not designated as controlled equipage, normally are replaced only during a ship's regular overhaul. Replacements of such items (e.g., anchors, shots of chain, chain stoppers, binnacles, pelorus, laundry equipment) when accomplished during a regular overhaul, are chargeable to overhaul funds. If replacement of such items is required between overhauls, an OPTAR augmentation normally will have to be requested from the type commander.

● REPAIR PART. The term "repair part" refers to any item, including modules and consumable type materials, which has an equipment application and appears in an APL, Stock Number Sequence List (SNSL), Integrated Stock List (ISL), Naval Sea Systems Command drawings, or a manufacturer's handbook. Part III, Section A of the COSAL (SNSL/ISL of Storeroom items) lists repair parts and equipment-related consumables normally stocked by the supply department. Any item in Section A is considered, by definition, a repair part.

● CONSUMABLES. The term "consumables" refers to administrative and housekeeping items, common tools, paints, cognizance symbol 1I forms, or any other items not specifically defined as equipage or repair parts.

● REPAIRABLE. The term "repairable" refers to a component or part designated by the cognizant inventory manager as an item which can be economically repaired when it becomes unserviceable. Repairable items are identified by material control code (MCC), D, E, G, H, Q, or X. MCC D items may be disposed of locally when they become unserviceable and cannot be locally repaired (i.e., by an organizational or intermediate maintenance activity). MCC E, G, H, Q, and X items are "mandatory turn-in repairables" and must be transferred to a designated depot level repair facility when they become unserviceable and cannot be repaired.

CIRCUIT SYMBOL. "Circuit symbols" are used for electronic equipment in the same way that part numbers, drawing numbers, and the like, are used for other equipment. Most circuit symbol numbers are cross-referenced in APLs to an NSN for the particular part required.

END ITEM. An "end item" is a combination of products, components, parts, and/or materials which is ready for its final intended use. It is an equipment or one of its major subdivisions.

ARTICLE. An "article" consists of a collection of items within a class (e.g., ensigns, all nations; or safety shoes, black, all sizes.)

ITEM. An "item" consists of each size or color of an article (e.g., Ensign, U.S., No. 7).

REPLACEMENT ITEM. A "replacement item" is a different item supplied as a spare or repair part in place of the originally used part. Replacement items are not necessarily identical to the items they replace; they may be of better quality or may have greater capacity than the items replaced. Replacement items are not substitutes because they are supplied on a continuing basis.

MAKE ITEMS. A "make-item" is an item that is made from raw or bulk stock or by modifying other stocked items and is not procured for stock or issue in finished form.

Make-items are source coded "MF" or "MO" in the COSAL.

● EQUIVALENT ITEM. An "equivalent item" is an item that is similar to another item to the extent that its characteristics are in strict accordance with drawings, specifications, standards, and performance qualification tests, within limits, or tolerances, and compounds, specified therein. Repairable assemblies are equivalent only if their "purchased repair parts" are limited to those items of a design peculiar to the repairable assembly concerned.

● INTERCHANGEABLE ITEM. An "interchangeable item" is not equivalent but may be used in place of another item in all applications.

● SUBSTITUTE ITEM. A "substitute item" is an item authorized for one-time use in place of another item based on a specific application and request. Equivalent or interchangeable items are not included in the term "substitute items." No substitute will be used that might adversely affect any one of the following:

1. Safety of flight (considering all primary structure and equipment)

2. Efficient functioning or performance of any aircraft, engine, accessory, or equipment

3. Manufacturer's guarantee or warranty

4. Delicate, sensitive, or critical assemblies, or those subject to environmental conditions, high speed, or high loads

The authority for a substitute is automatically canceled as soon as a substitute is made. Any additional request for the same substitute item must be considered separately and entirely on merits which justify its performance.

● ACCESSORY. The term "accessory" refers to a part, subassembly, or assembly designed for use in conjunction with or to supplement another assembly, unit, or set, contributing to the effectiveness thereof without

extending or varying the basic function of the assembly or set. An accessory may be used for testing, adjusting, or calibrating purposes (e.g., test instrument, recording camera for radar set, headphones, emergency power supply).

● ATTACHMENT. The term "attachment" refers to a part, assembly, or subassembly, designed for use in conjunction with another assembly, unit, or set, contributing to the effectiveness thereof by extending or varying the basic function of the assembly, unit, or set (e.g., hoisting attachment on a truck, milling attachment for a lathe).

● MAJOR COMPONENT. A "major component" is an item that is supported by an APL, but which is used in a larger item, such as equipment. For example, the meat slicer in the enlisted dining facility is an equipment which is supported by an APL, and contains two components, the drive motor and the starter motor, both supported by individual APLs.

● MAJOR UNIT OR COMPONENT. A "major unit or component" is a particular component or segment of an equipment. For example, a radar set may have several major units, among them a tuner, amplifier, antenna pedestal, and the like.

● ALTERNATE NUMBER. An "alternate number" is a type of reference number. Identification to an NSN is normally made by use of a primary reference number. Additional numbers that can be used to determine an NSN, such as manufacturers' part numbers, drawing, and piece numbers, are referred to as alternate numbers.

● REFERENCE NUMBER. A "reference number" is any number other than the current stock number, or circuit symbol in electronic equipment, that is used to identify a part. The most important reference numbers are manufacturers' part numbers. Superseded stock numbers are also a type of reference number. Reference numbers are used in the MCRL and COSAL to determine the NSN.

COMMON ITEM. The term "common item" refers to an item of standard design, application, and specification normally procurable from several manufacturers or suppliers, or available from only one manufacturer but with wide usage, or an item of such design that multiple applicability is apparent.

● OPERATING SPACE ITEMS (OSI). Operating space items are those items in the custody and under the management of the department heads. Certain operating space items which require special inventory control are designated as "controlled equipage."

1. MAINTENANCE ASSISTANCE MODULES will be included in an Operating Space Item (OSI) in the COSAL, Section III CF of the Stock Number Sequence List (SNSL).

2. READY SERVICE SPARES are coded as Operating Space Items (OSI) and listed in the COSAL Part III Section CR.

COSAL

The primary goal of this section is to provide detailed procedures on the proper use and maintenance of the Coordinated Shipboard Allowance List (COSAL). To master these procedures is to master the COSAL. The key to such mastery is an understanding of basic COSAL theory. This section approaches that understanding in three steps. First, it explains how the COSAL functions as one of three categories comprising the Ship's Selected Records (SSR). Second, it tells how the COSAL is developed. Third, it describes how the COSAL is produced.

SHIP'S SELECTED RECORDS (SSR)

The SSR are collective technical documentation providing essential facts about the maintenance, operation, and configuration of a ship. The three categories of SSR are:

1. Selected Record Drawings

These are drawings illustrating the important features, systems, and arrangements of a

particular ship. Two sets of drawings are furnished each ship.

2. Selected Record Data

This is data describing arrangements, equipment, systems, and procedures essential to the operation of a ship. It includes damage control books, ship information books, system and equipment technical manuals, ship's drawing indexes, training aid booklets, propulsion operating guides, and others. Each ship is given two copies of all selected record data.

3. Allowance Lists

The COSAL documents the hardware and software required to operate and maintain the equipment on the ship. Clearly, it is essential to both maintenance and supply personnel; therefore, all ships receive a COSAL.

Knowing about all three categories of SSR will often help you use the COSAL effectively. For example, both technical manuals and drawings are often used with the COSAL to identify and procure failed parts.

Development and Maintenance

Various activities develop and maintain the SSR: the shipbuilder, planning yard, overhaul yard, forces afloat, and NAVSEA.

● Shipbuilder.—Develops the initial SSR.

Planning yard.—Maintains master copies of SSRs for assigned ships and corrects them to reflect changes between overhauls reported by forces afloat and other activities. Monitors quality and accuracy of SSRs.

Overhaul yard.—Updates SSRs to reflect alterations made and changes reported by forces afloat. Obtains master SSRs from planning yard and updates them during overhaul.

Forces afloat.—Documents changes that occur between overhauls. Identifies and reports discrepancies in SSRs.

NAVSEA.—Implements CNO-approved Fleet Modernization Program (FMP) of ship alterations and improvements. The NAVSEA-administered Design Services Allocation (DSA) portion of the FMP funds the updating of technical documentation.

Forces afloat, planning yards, overhaul yards, SUPSHIPS, and other activities all play an important part in assuring that ship's records accurately reflect the latest ship configuration. Nevertheless, of all the activities, ship's force plays the key role in quality assurance.

COSAL DEVELOPMENT

Initial Provisioning Cycle

The Navy is constantly procuring new systems, equipment, and components. These must be supported by items such as spare and repair parts, special tools, test equipment and support equipment. The two-phase process of provisioning provides this support for an initial period of service. In the first phase, the requirements are determined and then documented by the publication of an Allowance Parts List (APL). During the second phase, the required support items are procured and delivered. The Chief of Naval Material (CNM) is responsible for the provisioning process; it is primarily carried out by the Hardware Systems Commands (HSCs). Three "field agents" that play a major role in the provisioning process are the Ships Parts Control Center (SPCC), the Naval Ships Engineering Center, Mechanicsburg Division (NAVSSESDETMECH) and the NAVELEX Detachment, Mechanicsburg (NAVELEXDETMECH). These three commands, located at Mechanicsburg, PA, develop the requisite APLs and Allowance Equipage Lists (AELs).

Lead APL Method

For hull, mechanical, and electrical equipments the Lead APL (LAPL) Method reflects the requirements of a shipboard equipment maintenance plan and is used in the preparation of APLs. The LAPL will list those types of items determined to be maintenance

significant; e.g. the LAPL for a centrifugal pump will show that all shims, seats, sleeves, and the like, are considered to be maintenance significant and are to be listed on the APL. The maintenance level code, repair capability code and recoverability code, among others, will be provided for each item. Source, Maintenance and Recoverability codes (SM&R) are becoming increasingly more important due to MTR emphasis, funding, and requirements of maintenance programs such as 2M. Manufacturers' drawings, operating manuals, and the like, are used with the LAPL to identify specific parts and develop the APL.

Without doubt, the fundamental elements of the provisioning process are the APLs and AELs. These elements are the heart of the COSAL which, in turn, is the key document supporting the shipboard maintenance effort. Properly used and maintained, the COSAL can have a significant effect on the ability of shipboard personnel to identify and obtain the repair parts and other material required to repair and maintain their equipment.

Weapons System File (WSF)

The COSAL is produced from the Weapons System File, a computerized data base maintained by SPCC at Mechanicsburg, PA. Knowing the categories of information contained in the WSF will help you to see more specifically how the COSAL and WSF are related. The WSF consists, among other things, of the following information:

● Technical characteristics of all equipment in the Navy inventory

● Data showing all maintenance-significant repair parts for a given piece of equipment

● Codes reflecting maintenance philosophy (e.g. repair or replace), expected failure rates, and other technical information about individual parts

● Data showing which equipments are reported to be installed in which ships and for

what purpose (i.e. service application). Five sources providing such equipment installation data are:

1. Provisioning cycle

2. Naval Shipyard/SUPSHIPS. Reports equipment installations/removals/changes during new construction or overhaul.

3. Other technical commands. Furnish technical and maintenance data on system equipment components.

4. Ship's force. Generates Ships Configuration Change Form (OPNAV 4790/CK) to report installations/removals/modifications or equipment installed but not supported. The EMO must ensure that this reporting system reflects all changes in order to provide proper support for equipment.

5. Naval Sea Support Center Detachments. Provide adds/changes/deletes resulting from SECAS site validations.

● Data for equipments included for CSA (Configuration Status Accounting) purposes or for equipments/APLs included for supply support purposes depending on the type of item involved. The equipment may or may not appear in the COSAL. Categories of items which are in the WSF, but not in a COSAL are:

1. Electronics SECAS Fallout Records are equipment included in the WSF from a SECAS site validation which have not been identified to a support RIC at the time of the COSAL extracts. The equipment will appear in the SECAS reports, but will not appear in the COSAL. A list of all Electronics SECAS Fallout Records is provided with the COSAL, and processing instructions are included with the COSAL forwarding letter.

2. Nonaccomplished field changes, ECs (Engineering Changes), ECPs (Engineering Change Proposals), ORDALTS, and the like, are included in the WSF for CSA purposes and will not appear in the COSAL.

3. Planned deletes are equipments which are scheduled to be removed during the overhaul and are excluded from the COSAL. The equipment will appear in the SECAS reports. A separate listing of both planned adds and planned deletes is also provided with the COSAL.

4. Supply Support Items are equipments/APLs added to the WSF for support purposes and may, or may not, appear in the SECAS reports at the time the COSAL is extracted. Generally, supply support items will be miscellaneous support type APLs which are not actual "hardware." For example, the AM-2123(V)/U will also have the AM-2123(V)/U Misc Interface APL in the COSAL.

Before proceeding to the third element of COSAL theory—COSAL production—note that the WSF data above is used to develop several allowance and configuration products other than the COSAL:

Validation aids. A characteristics card is made for each component/equipment for every Service Application included in the WSF. In effect, these cards give a "picture" of the ship's configuration as "seen" by the WSF. They are used by the SECAS Validation teams to validate the accuracy of WSF data before a new COSAL is produced.

Allowance revision documentation. New APLs and changes to existing APLs.

APL/AEL Generation Distribution Microfiche Bank. Every APL/AEL developed and published by the Navy is copied in microfiche. The bank currently contains over 300,000 APLs and about 8,000 AELs.

Master Index of APLs/AELs (MIAPL). The microfiche MIAPL lists what APLs/AELs are available and cross references various equipment identification numbers to an existing

APL/AEL. This cross-indexed information consists of nine parts:

Part 1	Equipment/Component Name
Part 2	Drawing/Identification to APL
Part 3A & 3B	Technical Manual Cross Reference to APL
Part 4	Stock Number Cross Reference to APL
Part 5	Equipment Specification
Part 6	Manufacturer FSCM to Catalog ID
Part 7	Standard Equipment/Component List
Part 8	Nomenclature to Repairable Identification Code (RIC)
Part 8A	USCG Nomenclature
Part 9	RIC to Nomenclature

The MIAPL and other SPCC microfiche products are available to ships as follows:

Nomenclature	Cost per set (1980)
HME APLs/AELs HULL, MECHANICAL, ELECTRICAL	$446.00
NRP APLs/AELs NUCLEAR REACTOR PLANT	$ 12.00
ORDNANCE APLs/AELs	$ 20.00
MOBILE EQUIPMENT APLs/AELs	$ 40.00
ELECTRONIC APLs/AELs	$230.00
MASTER INDEX OF APLs (Additional Copies)	$ 31.00
CANCELLATION AND SUPERSESSION RECORD	$ 5.00
CROSS REFERENCE FILE (PART #/FSCM TO NSN/UCN)	$ 36.00
PERMANENT NAVY ITEM CONTROL NO. CROSS REFERENCE (P-NICN)	$ 10.00
NSN/NISN TO RIC (P-NICN) NATIONAL STOCK #/NATIONAL ITEM CONTROL # TO RIC	$ 30.00
SHIPS HISTORY FILE	$237.00

Minimum order is $100. If only one product (less than $100) is required, it is recommended that orders be consolidated with ships in the same squadron/group/TYCOM. Once orders are filled for ships they will be included in the automatic distribution for subsequent changes at no additional cost. Submit orders by DD Form 1149 to Commanding Officer, Ships Parts Control Center, Code 573, P.O. Box 2020, Mechanicsburg, PA 17055.

COSAL PRODUCTION

As noted earlier, the COSAL is produced from the WSF. The WSF is constantly updated with equipment configuration and repair part data for every ship. This starts during the construction of a ship and continues throughout its life. When all available information has been loaded into the WSF, the computers print out each ship's COSAL. If the data is accurate, the COSAL will be accurate. If not, the COSAL will be inaccurate and the corresponding degree of reduced material readiness will result. Obviously, all discrepancies in the COSAL should be reported promptly.

COSAL Division

The COSAL is produced in three parts. Part I contains an index of installed equipment and the APL/AEL numbers that apply to them, according to information reported to SPCC. The actual APLs and AELs associated with the equipment comprise Part II. Part III A is the Stock Number Sequence List (SNSL) which enumerates parts on the APLs that will actually be allowed aboard as Storeroom Items (SRI). An introduction precedes Part I and gives information concerning COSAL data content and code definitions. SPCCINST 4441.170 (Series) is the reference document for format and use of the COSAL.

New ships start out with new COSALs. Usually, subsequent COSALs are produced only in conjunction with overhauls. Figure 15-7 shows the COSAL development process.

COSAL Introduction: Contains a detailed description of data elements of the COSAL and of the notes and codes that reflect maintenance and support policies.

Chapter Three contains detailed information concerning the data content of each part of the COSAL. The important COSAL elements are summarized as follows:

PART I.—Part I contains the following indices:

Section A...Equipment Nomenclature Sequence

Section B...Service Application Sequence

Section C...APL/AEL-to-Equipment Identification Code to Work Breakdown Structure Code*

Section D...Equipment Identification Code to APL/AEL*

Section E...Work Breakdown Structure Code to APL/AEL*

*COSALs published after May 1978 only.

NOTE: COSALs published during the period July 77—May 78 contain indices A through E. The COSAL Introduction provided with those COSALS contains description and data content of indices C, D, and E.

Part I also contains a Summary of Effective APLs/AELs (SOEAPL). Only those APL/AEL numbers cited in the SOEAPL will have NSN support on the APL/AEL or have accessory APLs listed. All the APL/AEL numbers cited in the Indexes A, B, C, D, and E will be contained in Part II. Those APL/AEL numbers not having NSN support or accessory APLs will have the allowance support code shown on the APL/AEL, with a full explanation why the equipment/equipage is not supported.

In some cases an APL is still under development and therefore not available. In some cases the equipment will not have an APL developed because it is considered non-APL worthy. In either case local review should be initiated to determine what interim support action, if any, should be taken. Ensure any support action taken is in accordance with NAVSUP P-485 stocking criteria.
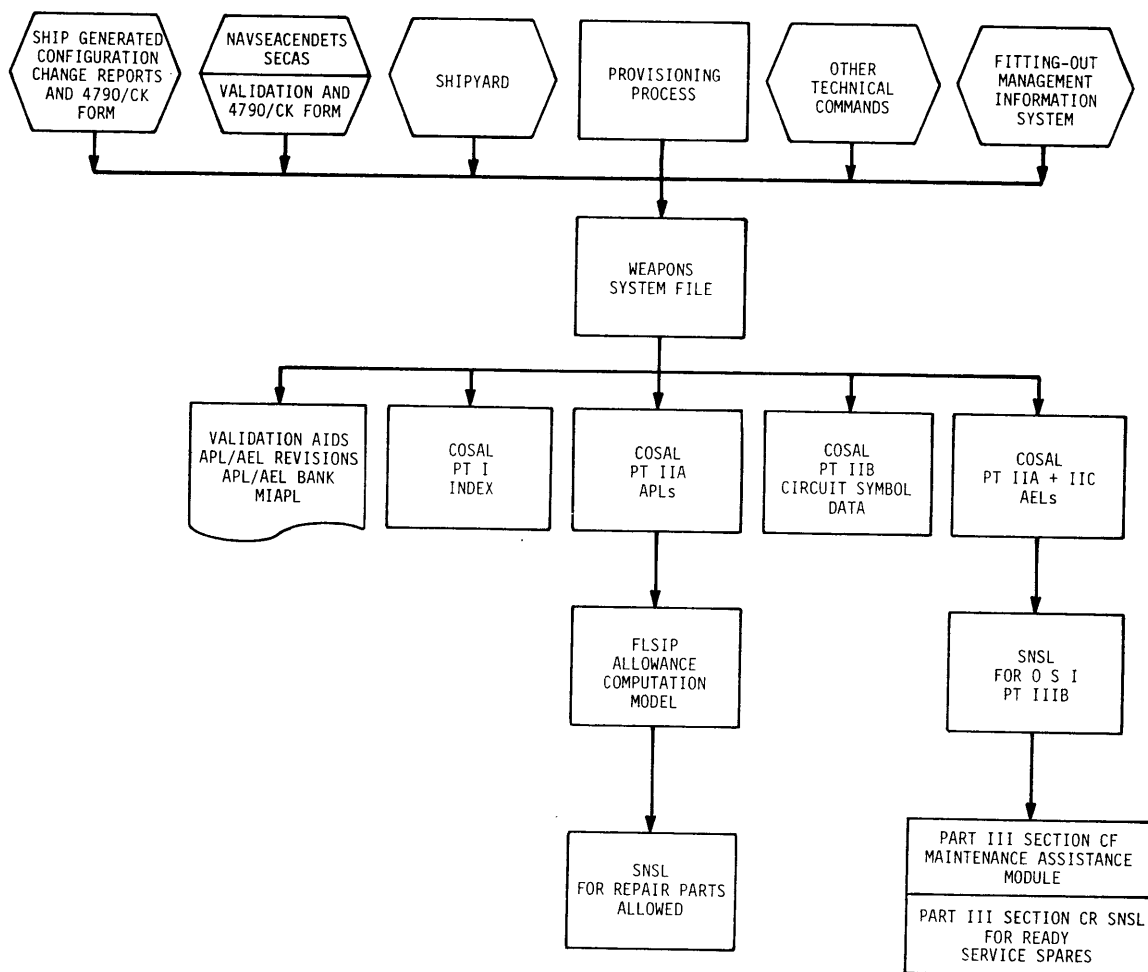
Figure 15-7.—Flow Chart for COSAL production system.   245.110

PART II.—Part II of the COSAL is sub-divided into sections as follows:

<u>Hull, Mechanical, Electrical, and Ordnance COSAL</u>

Part IIA   APLs
Part IIC   AELs

<u>Electronic COSALs</u>

Part IIA   APLs
Part IIB   APL Cross Reference (microfiche only) from Circuit Symbol number to FSCM/PART number/NIIN/NICN
Part IIC   AELs

The APL describes the technical characteristics of the equipment and lists all repair parts which are considered to be maintenance significant; i.e., it lists the part that engineering judgment predicts could fail. Each repair part listed is a potential allowance item but only those with a sufficiently high predicted-failure rate will normally be carried. Part II Section C contains Allowance Equipage Lists (AELs) for Operating Space Item (OSI) Allowances. This material falls into the general category of tools and equipage type items which are retained in the custody of the user departments. In some cases, repair parts which are intended to be kept with the equipment are listed in AELs or are reflected as OSI items on APLs.

15-22

PART III SECTION A.—Part III Section A of the COSAL is the SNSL which lists all maintenance-significant items on the APLs in the ship's COSAL that are allowed onboard as Storeroom Items (SRI). To determine which items will be allowed, two steps are taken. The first step is to identify the maintenance code (assigned to each item on the APL) which indicates what types of ships have the capability to install that item in an equipment. If the maintenance code indicates that a particular item is beyond a certain ship's capability to install, that item is not considered for allowance on that particular ship. Conversely, items on an APL that are within the maintenance capability of a particular ship to install in equipment are considered for allowance.

Once the items on the APLs in the ship's COSAL (that its maintenance personnel can install) have been identified, the second step is taken. The items are passed through a mathematical model known as the Fleet Logistics Support Improvement Program (FLSIP) Exclusion Model which is used in computing allowances for all ships, except FBM submarines and nuclear Q-COSALs. Basically, if there are no overrides, a repair part must have a Navy-wide predicted or actual failure rate of one or more in a four-year period to compute for allowance. Figure 15-8 shows the basic FLSIP computation method. A simplified version of the FLSIP formula is:

$$UR = \frac{POP \times BRF}{4}$$

UR = Usage Rate. (An estimate of how often a part will be needed per quarter)

POP = Population of the part on board the ship

BRF = Best Replacement Factor. The predicted rate of failures per year. For new equipment this is an estimate made by engineers. It is adjusted annually to reflect fleet maintenance usage as reported on NAVSUP 1250 or DD 1348M. In this formula, BRF is the only variable.

Dividing by 4 determines the expected usage for a 90-day period (.25) which is the CNO-established stocking level.

If UR is less than .0625 the part is not carried. If UR is equal to .0625 but less than 1.0000, the item will be carried as an insurance item (usually in the quantity of 1 each, or the minimum replacement unit if greater) provided it is vital to the operation of mission essential equipment. If UR is 1 or greater, the item is a demand-based item and will be carried in a computed quantity determined by expected demand level but usually greater than 1 each.

There are certain Technical Overrides (TORs) that can cause a part to be carried or not carried regardless of the value of UR. Known Planned Maintenance Requirements (PMR) for 90-day usage will also override the allowance computation.

The only variable in the FLSIP formula is the BRF. Usage data is collected from the fleet via the 3-M Systems. If the usage data shows that a particular item is failing at a rate faster than the predicted failure rate assigned during provisioning, the BRF will be changed and subsequent COSAL allowances will reflect that change. Establishment and update of BRFs are engineering functions under the cognizance of NAVSSES, Mechanicsburg Division, NAVELEX Detachment Mechanicsburg, and SPCC/FMSO. BRFs are reviewed and updated annually.

To illustrate how the FLSIP formula works, suppose that a particular transistor is installed in a radar set, that there is only one of that particular radar onboard, and that the transistor is not used in any other equipment. The population (POP) of that transistor would be 1.

$$UR = \frac{1 \times BRF}{4}$$

Assume that usage data on the transistor via the 3-M Systems has not accumulated and that engineers have predicted the transistor will fail once every seven years. The predicted failure rate, i.e., BRF would be 1/7 or 0.14.
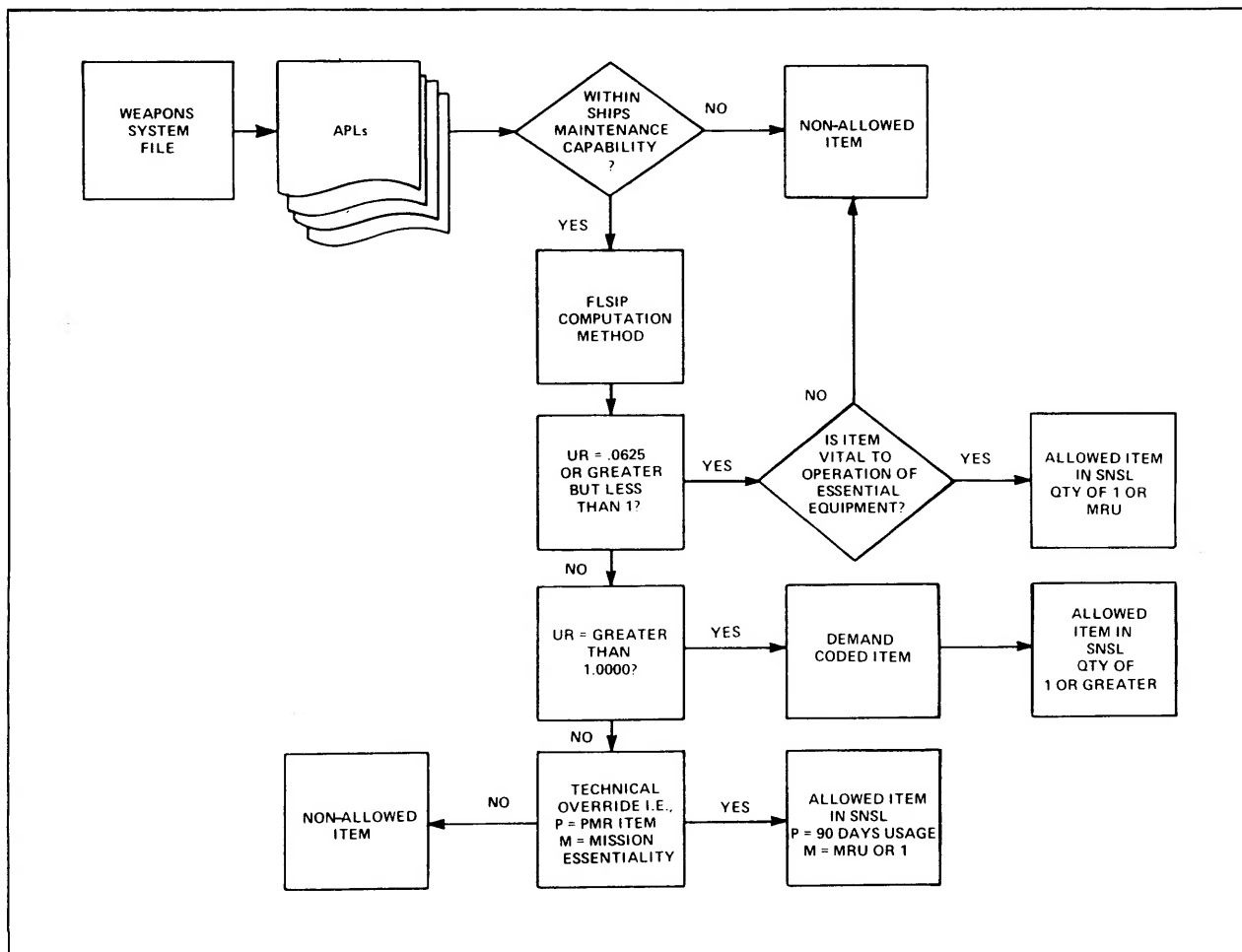
$$UR = \frac{1 \times 0.14}{4} = 0.035$$

Figure 15-8.—Basic .25 FLSIP computation method.

The usage rate (UR = 0.035) is less than 0.0625; therefore, the transistor would not be allowed unless there was a technical override; e.g., the transistor is required to perform PMS.

On the other hand, if the population of the transistor were two, or if the failure rate were one every four years, UR would equal 0.70 and 0.0625 respectively and the transistor would qualify as an allowed item.

Selected Item Management System (SIM)

During Ship's Operating Cycle, which is the period between overhauls, and before a new COSAL is issued, the Selected Item Management System (SIM) adjusts local inventory levels upward. On nonautomated ships, SIM focuses management attention on the small percentage of items most in demand. An item qualifies as SIM if it experiences two or more distinct demands in a six-month period. Allowed items qualifying as SIM are carried in quantities above allowance based upon past demands. Previously nonallowed items designated SIM can now be stocked.

It is important to realize that improper documentation and stockpiling of material adversely affects SIM effectiveness; e.g., a technician needs one transistor to repair a radar;

the transistor is not a carried item; the technician orders two, one to make the repair, the other to have on hand when replacing the transistor in another radar in two months. By requesting the two transistors on one document, the technician documents a frequency of demand of one in six months. This does not meet the criteria for SIM, (i.e., a demand of two or more within a six-month period), so the item remains not carried. Once established as SIM, an item must experience a demand frequency of one in six months to remain a SIM item. NAVSUP P-485, Chapter Six, provides detailed procedures for the SIM program.

A nonallowed, not-carried item with a frequency of demand of two in a 12-month period qualifies for stocking on board as a NON-SIM item in a quantity of one each, or minimum replacement quantity.

SUMMARY

The above processes establish a baseline COSAL. The COSAL is a dynamic document that must be constantly updated to reflect changing equipment configurations aboard ship. Errors in data contained in the WSF will result in errors in the COSAL. It is the responsibility of both technical and supply personnel to detect and correct errors at the shipboard level. It is the technician's responsibility to ensure that the COSAL supports all equipment for which the technician has maintenance responsibility. It is the storekeeper's responsibility to ensure that errors detected by the technician are corrected and the necessary repair parts procured and DOCUMENTED in the COSAL.

Documentation is extremely important. The COSAL is the bridge by which the part number contained in a technical manual is linked to a part carried by supply. Procuring parts without concurrently updating all copies of the COSAL shatters the bridge and results in the all-too-common situation in which the parts are available, but cannot be identified by the technician. Of all the members of the team involved in the evolution of the COSAL, the shipboard sailor remains the critical player.

You should thoroughly understand the workings of the COSAL. SPCCINST 4441.170 (with changes) is highly recommended reading, along with *Afloat Supply Procedures,* NAVSUP P-485.

SYSTEM IMPROVEMENTS BY MEANS OF AUTOMATION

Throughout this text you have been introduced to many of the myriad forms, reports, records, and so on which fall under the EMO's administrative responsibilities. As the tempo of fleet unit employment increases and as the units become ever more complex and sophisticated, this administrative burden upon resources (primarily manpower) will obviously continue to increase. This burden, with its corresponding degradation in efficiency, has long been recognized, and now it has been assigned a CNO priority for alleviation. Since the mid 1960's fleet non-tactical Automated Data Processing (ADP) support has been provided to larger ships through the use of the AN/UYK-5(V) computer. These ships were primarily limited to aircraft carriers and those units with a mobile logistics support force role. These ADP systems have since been updated through the Shipboard Non-Tactical ADP Program I (SNAP-I).

Throughout this time the smaller ships have continued to be burdened with manual systems. In the SNAP-II program, which is currently well underway, these smaller units will be provided ADP capabilities in some of the non-tactical areas. The SNAP-II program involves the procurement of off-the-shelf (commercially available) minicomputers and peripheral equipage with subsequent installations to provide terminal equipment in the user spaces, for example; supply, personnel, disbursing and maintenance offices. SNAP-II systems will be provided in three basic "sizes" and tailored to the needs of a particular ship or class, and will have the capability for expansion. Installation will be by the "tiger team" (specialized team) concept, and supporting software will be provided commencing in 1982 and carried through to the completion of 452 fleet systems in 1985. The systems are planned to automate the

currently manual shipboard paperwork functions in the areas of: Ship's Maintenance and Material Management (3-M), supply, financial, pay, personnel, administration, food service, medical and dental, Air Maintenance and Material Management (3-M), Mobile Logistics Support Force (MLSF), training, technical library, support and test equipment management, and retail operations. Early installations; FY-82 and 83, will provide initial release software and data bases for maintenance, supply and word processing functions. Software and data bases for other functions will be phased in over the FY-83-87 time frame.

You, as the EMO, will have a dual interest in the SNAP-II equipage should you be assigned to a ship so equipped. First, the system will drastically alter many of your administrative procedures such as maintenance action/MDS reporting, COSAL support and supply parts. Secondly, the ship's Electronics Technicians will be tasked to provide the required organizational level preventive and corrective maintenance. Intermediate level maintenance will be provided by Data Systems Technicians (DS) from SNAP-I ships or from selected shore establishments on a case basis. The forgoing is obviously a very limited overview of the planning, status and capabilities of the SNAP-II program, however it is included to alert you, the EMO, to the existence of this new program and its impact upon your area of responsibility.